

WHAT IS CLAIMED IS:

1. A photochromic plastic object comprising a transparent synthetic resin body composed of at least two interpenetrating polymer networks of different polymer materials and at least one photochromic dye homogeneously distributed therein.

2. A photochromic plastic object according to claim 1, wherein one of the at least two interpenetrating polymer networks is composed of polyurea or polyurethane.

3. A photochromic plastic object according to claim 2, wherein a second one of the at least two interpenetrating polymer networks is composed of polyacrylate, polymethacrylate or a mixture thereof.

4. A method of producing a transparent synthetic resin body composed of at least two interpenetrating polymer networks of different polymer materials and at least one photochromic dye homogeneously distributed therein, said method comprising

initially producing a first polymer network composed of a first polymer material;

subsequently producing a second polymer network composed of a second polymer material different from said first polymer material in such a way that the two networks of different polymer materials interpenetrate, and

adding the at least one photochromic dye before or during polymerization.

5. A method according to claim 4, wherein said first polymer network is produced without using an initiator.

6. A method according to claim 4, wherein the first polymer network is produced by a polyaddition reaction, and the second polymer network is produced by thermal, radical or UV-light initiated polymerization.

7. A method according to claim 6, wherein the polyaddition reaction is carried out at room temperature and without using an initiator.

8. A composite comprised of a photochromic plastic object according to claim 1, and at least one inorganic material.